

of the boron grain refiner of US-A-6168071 and EP-B-0729398 significantly reduces the pitting and sagging consequent on formation and melting of the binary eutectic, the formation and melting of that eutectic is, as previously mentioned, not eliminated and there is still scope for the further development of the ternary alloy to improve its pitting and sagging properties. By increasing the silver content above the level for Sterling but less than that for Britannia it is possible to produce an alloy in which the above binary eutectic either does not form or gives rise to reduced problems in subsequent heat treatment. This provides alloys with a much greater inherent stability under thermal processing.

5 The germanium addition prevents the reduction in hardness that would be seen in a silver-copper alloy of this composition. The alloy also shows resistance to tarnishing, even under very arduous test conditions.

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The invention therefore provides a ternary alloy of silver, copper and germanium containing from more than 93.5 wt% to 95.5 wt% Ag, from 0.5 to 3 wt% Ge, 1-40 ppm of B, optionally 0.5 wt % of any of Zn, Cd and Sn, optionally 0.1-1 wt % Si, and the remainder, apart from impurities copper, wherein the weight ratio of Cu to Ge is from 4:1 to 3:1.

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A typical alloy that has been found to be suitable contains about 94.5 wt% Ag, about 4.3 wt% Cu and about 1.2 wt% Ge. In the above alloy the weight ratio of Cu to Ge is about 3.6:1 whereas in the existing 925 grade Argentium the ratio can be from 5.8:1 (1.1 wt% Ge) to 4.8:1 (1.3 wt% Ge). The applicants consider that it is the reduction in the Cu:Ge weight ratio that is responsible for the reduced thermal processing problems, the CuGe eutectic either not forming or forming in a significantly reduced amount during post-melt thermal processing. In particular the ratio is from 4:1 to 3:1, preferably about 3.5:1. Above 4:1 the alloy is more likely to exhibit firestain, whereas below 3:1 the high germanium content gives rise to formability problems.

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In the above alloy, preferred Ag contents range from about 94.0 to about 95.5 wt%, lower values being preferred for reducing the expense of the silver

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